

WHAT IS CLAIMED IS

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1. A method of allocating radio resources, in a base station, to the base station and a mobile station, comprising the steps of:

obtaining a ratio between traffic of  
10 uplink for transmission from the mobile station to the base station and traffic of downlink for transmission from the base station to the mobile station such that the ratio reflects empirical data; and

15 allocating the radio resources to the uplink and the downlink according to the obtained ratio.

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2. The method as claimed in claim 1, further comprising a step of dividing time into a plurality of time periods, wherein said step of  
25 obtaining a ratio obtains the ratio with respect to each one of the time periods by deriving the ratio from traffic of the uplink of a corresponding time period and traffic of the downlink of the corresponding time period.

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3. The method as claimed in claim 2,  
wherein said step of obtaining a ratio obtains the  
ratio by averaging a ratio between traffic of the  
uplink and traffic of the downlink over a first  
5 predetermined period with respect to each one of the  
time periods.

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4. The method as claimed in claim 2,  
further comprising the steps of:

obtaining an instantaneous ratio between  
traffic of the uplink and traffic of the downlink  
15 for a second predetermined period immediately  
preceding a present instant where the second  
predetermined period is shorter than the first  
predetermined period; and

obtaining a weighted average of the ratio  
20 averaged over the first predetermined period and the  
instantaneous ratio by weighting the ratios with  
respective weighting factors, wherein said step of  
allocating the radio resources allocates the radio  
resources to the uplink and the downlink according  
25 to the weighted average.

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5. The method as claimed in claim 1,  
further comprising a step of transmitting, to the  
mobile station, information about the radio  
resources with respect to at least one of the uplink

and the downlink.

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6. The method as claimed in claim 1,  
further comprising a step of allocating transmission  
power according to communication quality required  
for the uplink and the downlink.

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7. A base station apparatus which  
15 communicates with a mobile station apparatus,  
comprising:

a computation unit which obtains a ratio  
between traffic of uplink for transmission from the  
mobile station to the base station and traffic of  
20 downlink for transmission from the base station to  
the mobile station such that the ratio reflects  
empirical data; and

an allocation unit which allocates the  
radio resources to the uplink and the downlink  
25 according to the obtained ratio.

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8. The base station apparatus as claimed  
in claim 7, wherein time is divided into a plurality  
of time periods, and said computation unit obtains  
the ratio with respect to each one of the time

periods by deriving the ratio from traffic of the uplink of a corresponding time period and traffic of the downlink of the corresponding time period.

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9. The method as claimed in claim 8, wherein said computation unit further obtains the ratio by averaging a ratio between traffic of the uplink and traffic of the downlink over a first predetermined period with respect to each one of the time periods.

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10. The method as claimed in claim 8, wherein said computation unit further obtains an instantaneous ratio between traffic of the uplink and traffic of the downlink for a second predetermined period immediately preceding a present instant where the second predetermined period is shorter than the first predetermined period, and obtains a weighted average of the ratio averaged over the first predetermined period and the instantaneous ratio by weighting the ratios with respective weighting factors, and wherein said allocation unit allocates the radio resources to the uplink and the downlink according to the weighted average.

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11. The method as claimed in claim 7,  
further comprising a reporting control unit which  
transmits, to the mobile station, information about  
the radio resources with respect to at least one of  
5 the uplink and the downlink.

10 12. The method as claimed in claim 7,  
wherein the allocation unit allocates transmission  
power according to communication quality required  
for the uplink and the downlink.

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